CIVIL TECH LABS

Accredited by **NABL** as per ISO/ IEC 17025 : 2005

5, 1st Cross, Srinivasa Colony, Mission Road, Bangalore - 560027
Ph: 080 - 4114 2867 / Mob. : 96862 31801, Email: civiltechlabs@gmail.com

T-2654

To,

Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP.

11th April 2017

Dear Sir,

Sub: Testing of Granular Sub Base & Wet Mix Macadam.

As requested, tests on physical properties were carried out for the Granular Sub Base & Wet Mix Macadam supplied by you, for the work of **'Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

CIVIL TECH LABS BANGALORE

(KHUSHBOO L.)
Quality Manager

CIVIL TECH LABS

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TEST REPORT

GRADATION TEST ON GRANULAR SUB BASE MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Name of Agency	M/s. Technical Manager (West), KRIDL
Date of Testing	08/04/2017
Technical Reference	IS : 2386(Part I)-1963 (Reaffirmed 2011)

	Sample-1		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 400-1 for GSB Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
53	100	**100**	**Satisfies the requirement**
26.5	70-100	**98.4**	
9.5	50-80	**73.5**	
4.75	40-65	**54.6**	
2.36	30-50	**42.3**	
0.425	15-25	**18.4**	
0.075	3-10	**7.8**	

Note:

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3. Any correction invalidates this report.
4. The results are based on the test conducted on samples supplied by the customer.

Khushboo

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Quality Manager

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TEST REPORT

GRADATION TEST ON GRANULAR SUB BASE MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division
Name of Agency	M/s. Technical Manager (West), KRIDL
Date of Testing	08/04/2017
Technical Reference	IS : 2386(Part I)-1963 (Reaffirmed 2011)

	Sample-2		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 400-1 for GSB Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
53	100	**100**	**Satisfies the requirement**
26.5	70-100	**97.5**	
9.5	50-80	**74.8**	
4.75	40-65	**56.3**	
2.36	30-50	**43.5**	
0.425	15-25	**17.8**	
0.075	3-10	**6.9**	

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TEST REPORT

TEST ON AGGREGATES ('AIV' & Combined Flakiness & Elongation Index)

Wet Mix Macadam

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Agency of the Name	M/s. Technical Manager (West), KRIDL
Date of Testing	11/04/2017
Reference	**MORTH Table 400-10**

Sample No	Aggregate Impact Value 'AIV' in %	Average AIV in %	Remarks
1	21.7	22.1	Satisfactory (As per MORTH for WMM, Maximum allowed AIV is 30 %)
2	22.5		

Test	Result in %	Combined Flakiness & Elongation Index 'C-F&E' in %	Remarks
Flakiness Index	12.4	27.2	Satisfactory (As per MORTH for WMM, Maximum allowed 'C-F&E' is 30 %)
Elongation Index	14.8		

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TEST REPORT

GRADATION TEST ON WET MIX MACADAM

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Name of the Agency	M/s. Technical Manager (West), KRIDL
Date of Testing	11/04/2017
Technical Reference	MORTH Table 400-11

	Sample-1		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve**	**Actual % By Weight Passing IS Sieve**	**Remarks**
53	100	**100**	**Satisfy the Requirements**
45	95-100	**98.2**	
22.4	60-80	**75.4**	
11.2	40-60	**46.5**	
4.75	25-40	**32.8**	
2.36	15-30	**24.5**	
0.6	8-22	**16.8**	
0.075	0-8	**7.1**	

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TEST REPORT

GRADATION TEST ON WET MIX MACADAM

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Name of the Agency	M/s. Technical Manager (West), KRIDL
Date of Testing	11/04/2017
Technical Reference	MORTH Table 400-11

	Sample-2		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve**	**Actual % By Weight Passing IS Sieve**	**Remarks**
53	100	**100**	**Satisfy the Requirements**
45	95-100	**98.2**	
22.4	60-80	**74.2**	
11.2	40-60	**44.6**	
4.75	25-40	**32.5**	
2.36	15-30	**26.5**	
0.6	8-22	**16.5**	
0.075	0-8	**6.6**	

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Quality Manager

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T-2654

To,

Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP.

19th April 2017

Dear Sir,

Sub: Testing of Bituminous Macadam & Bituminous Concrete.

As requested, tests on physical properties were carried out for the Bituminous Macadam & Bituminous Concrete supplied by you, for the work of **'Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.'**

Please find the enclosed Test Reports of the above.

Thanking You,
For Civil Tech Labs

Khushboo

CIVIL TECH LABS BANGALORE

(KHUSHBOO L.)
Quality Manager

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TEST REPORT

TEST ON THE DETERMINATION OF BITUMEN CONTENT ON BITUMINOUS MACADAM MIX-GRADE 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Name of the Agency	M/s. Technical Manager (West), KRIDL
Date of Testing	17/04/2017

A)

Sl. No.	Test	Test Method	Technical Reference
1	Extraction of mineral aggregate	Test Method A (Centrifuge Method)	ASTM: D2172/ D2172M-11
2	Determination of amount of mineral matter/fines in the extract	Ashing Method	

B)

Specification: As Per MORTH (4th Revision) Table 500-4 BM-Grade -2, Bitumen Content for BM Grade-2 is 3.3 % TO 3.5 %

Sl. No.	Description	Values
1	Weight of bituminous mixture before extraction test, W_1 g	2000
2	Weight of mineral aggregate obtained from centrifuge extractor, W_2 g	1920.7
3	Weight of mineral matter in the total volume of extract (by ashing), W_3 g	11.4
4	Total weight of aggregate in the bituminous mixture, W_4 g = (W_2 +W_3) g	1932.1
5	Total weight of Bitumen extracted from the mixture, W_5 g = (W_1-W_4) g	67.9
6	Bitumen content in %, (W_5/W_1) %	3.39

Remarks	Satisfies the requirements.

Note:

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TEST REPORT

GRADATION TEST ON BITUMINOUS MACADAM MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Name of the Agency	M/s. Technical Manager (West), KRIDL
Date of Testing	17/04/2017
Technical Reference	IS : 2386(Part I)-1963 (Reaffirmed 2011)

	Sample-1		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-4 for BM Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
26.5	100	**100**	**Satisfies the requirement.**
19	90-100	**96.5**	
13.2	56-88	**73.4**	
4.75	16-36	**28.5**	
2.36	4-19	**16.5**	
0.3	2-10	**8.4**	
0.075	0-8	**6.6**	

Note:

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TEST REPORT

GRADATION TEST ON BITUMINOUS MACADAM MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Name of the agency	M/s. Technical Manager (West), KRIDL
Date of Testing	17/04/2017
Technical Reference	IS : 2386(Part I)-1963 (Reaffirmed 2011)

	Sample-2		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-4 for BM Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
26.5	100	**100**	**Satisfies the requirement.**
19	90-100	**98.5**	
13.2	56-88	**74.2**	
4.75	16-36	**27.4**	
2.36	4-19	**16.6**	
0.3	2-10	**7.4**	
0.075	0-8	**6.8**	

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TEST REPORT

TEST ON DETERMINATION OF BITUMEN CONTENT ON BITUMINOUS CONCRETE MIX-GRADE 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Name of Agency	M/s. Technical Manager (West), KRIDL
Date of Testing	19/04/2017

A)

Sl. No.	Test	Test Method	Technical Reference
1	Extraction of mineral aggregate	Test Method A (Centrifuge Method)	ASTM: D2172/ D2172M-11
2	Determination of amount of mineral matter/fines in the extract	Ashing Method	

B)

Specification: As Per MORTH (4th Revision) Table 500-18, Bitumen Content for BC Grade-2 is 5% to 7%

Sl. No.	Description	Values
1	Weight of bituminous mixture before extraction test, W_1 g	2000.00
2	Weight of mineral aggregate obtained from centrifuge extractor, W_2 g	1873.63
3	Weight of mineral matter in the total volume of extract (by ashing), W_3 g	12.89
4	Total weight of aggregate in the bituminous mixture, W_4 g = (W_2 +W_3) g	1886.52
5	Total weight of Bitumen extracted from the mixture, W_5 g = (W_1-W_4) g	113.48
6	Bitumen content in %, (W_5/W_1) %	5.67

Remarks	**Satisfies the requirement.**

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TEST REPORT

GRADATION TEST ON BITUMINOUS CONCRETE MIX GRADE - 2

Name & Address of the Customer	AEE, Yelahanka Sub Division, BBMP.
Name of Work	Asphalting and improvements to roads at Shivanahalli main and cross road in ward no. 01 of yelahanka Sub Division.
Name of Agency	M/s. Technical Manager (West), KRIDL
Date of Testing	19/04/2017
Technical Reference	IS : 2386(Part I)–1963 (Reaffirmed 2011)

	Sample-1		
IS Sieve Designation (mm)	**% By Weight Passing IS Sieve as per MORTH (4th Revision) Table 500-18 for BC Grade-2**	**Actual % By Weight Passing IS Sieve**	**Remarks**
19	100	**100**	**Satisfies the requirements**
13.2	79-100	**98.5**	
9.5	70-88	**82.5**	
4.75	53-71	**61.3**	
2.36	42-58	**46.5**	
1.18	34-48	**39.8**	
0.6	26-38	**31.2**	
0.3	18-28	**24.4**	
0.15	12-20	**18.6**	
0.075	4-10	**8.8**	

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